



Amendment
Serial No. 10/688,496

IN THE CLAIMS

Please amend the claim as follows:

1. (Currently Amended) A temperature-compensating device used in an avalanche photo diode (APD) optical receiver comprising:

a voltage-generator section;

an optical-receiving section having an APD and a thermistor for sensing a temperature change in the APD;

a control means connected to the thermistor to perform a control in such a manner that the control means receives a first resistance value from the thermistor, determines the temperature data of the APD using the first resistance value, determines an output-voltage data corresponding to the first resistance value, and determines a second resistance-value data for generating an output voltage in accordance with the output-voltage data; and,

~~a resistance means for outputting the second resistance value to the input terminal of the voltage-generator section~~ configured with a digital potentiometer having a resistance value of a plurality of steps.

2. (Currently Amended) The temperature-compensating device according to claim 1, wherein the control means comprises:

a resistance-control means;

a temperature-sensing means connected to the thermistor for receiving the first resistance value from the thermistor and transferring the same to the resistance-control means;

a temperature-resistance memory means for storing the temperature data of the APD in accordance with the first resistance value;

a temperature-voltage memory means for storing the output-voltage data in accordance with the temperature of the APD;

an initial value-memory means for storing initial values including a relational data between a reference-voltage value, the output voltage, and the second resistance value;

the resistance-control means is configured to: transfer the first resistance value received from the temperature-sensing means to the temperature-resistance memory means and receive temperature data in accordance with the first resistance value, transfer the received temperature data to the temperature-voltage memory means and receive output-voltage data in accordance with the temperature, and transfer the received output-voltage data to the initial value memory means and obtain and transfer the second resistance-value data in accordance with the output voltage; and,

a resistance value-setting means for receiving the second resistance-value data from the resistance-control means and transferring the second resistance-value data to the resistance means.

3. (Original) The temperature-compensating device according to claim 1, wherein the resistance value-setting means is configured to output a resistance in the range of 1 k Ω to 10 k Ω .

4. (Currently Amended) The temperature-compensating device according to claim 1, wherein the temperature-compensating device is configured to perform the following steps:

i) storing initial values including the reference-voltage value of the APD, the temperature data of the APD in accordance with the first resistance value, the output voltage-related data in accordance with the temperature of the APD, and the output voltage of the second resistance-value related data;

ii) confirming whether a temperature coefficient of the temperature-compensating device is changed and storing a new relational data in accordance with the "Steinhart & Hart" equation when the temperature coefficient has been changed;

iii) receiving the first resistance value from the thermistor and monitoring the change in the temperature of the APD;

iv) determining the second resistance-value data through the temperature data in accordance with the first resistance value, the output voltage-related data in accordance with the temperature of the APD, and the output voltage of the second resistance value-related data if the change in the temperature of the APD is sensed as the result of monitoring in the above step; and,

v) transferring the second resistance-value data to the resistance means so that the resistance means has the second resistance value.

5. (New) A temperature-compensating device used in an avalanche photo diode (APD) optical receiver comprising:

a voltage-generator section;

an optical-receiving section having an APD and a thermistor for sensing a temperature change in the APD;

a control means containing a temperature-voltage memory means for storing the output-voltage data in accordance with the temperature of the APD and being coupled to the thermistor to perform a control in such a manner that the control means receives a first resistance value from the thermistor, determines the temperature data of the APD using the first resistance value, determines an output-voltage data corresponding to the first resistance value, and determines a second resistance-value data for generating an output voltage in accordance with the output-voltage data; and,

a resistance means configured with a digital potentiometer having a resistance value of a plurality of steps.

6. (New) The temperature-compensating device according to claim 5, wherein the control means further comprises:

a resistance-control means;

a temperature-sensing means connected to the thermistor for receiving the first resistance value from the thermistor and transferring the same to the resistance-control means;

a temperature-voltage memory means for storing the output-voltage data in accordance with the temperature of the APD;

an initial value-memory means for storing initial values including a relational data between a reference-voltage value, the output voltage, and the second resistance value;

the resistance-control means is configured to: transfer the first resistance value received from the temperature-sensing means to the temperature-resistance memory means and receive temperature data in accordance with the first resistance value, transfer the received temperature data to the temperature-voltage memory means and receive output-voltage data in accordance with the temperature, and transfer the received output-voltage data to the initial value memory means and obtain and transfer the second resistance-value data in accordance with the output voltage; and,

a resistance value-setting means for receiving the second resistance-value data from the resistance control means and transferring the second resistance-value data to the resistance means.

7. (New) The temperature-compensating device according to claim 5, wherein the resistance means is configured to output a resistance in the range of 1 k Ω to 10 k Ω .

8. (New) The temperature-compensating device according to claim 5, wherein the temperature-compensating device is configured to perform the following steps:

i) storing initial values including the reference-voltage value of the APD, the temperature data of the APD in accordance with the first resistance value, the output voltage-related data in accordance with the temperature of the APD, and the output voltage of the second resistance-value related data;

ii) confirming whether a temperature coefficient of the temperature-compensating device is changed and storing a new relational data in accordance with the “Steinhart & Hart” equation when the temperature coefficient has been changed;

iii) receiving the first resistance value from the thermistor and monitoring the change in the temperature of the APD;

iv) determining the second resistance-value data through the temperature data in accordance with the first resistance value, the output voltage-related data in accordance with the temperature of the APD, and the output voltage of the second resistance value-related data if the change in the temperature of the APD is sensed as the result of monitoring in the above step; and,

v) transferring the second resistance-value data to the resistance means so that the resistance means has the second resistance value.

9. (New) The method for temperature-compensating, the method comprising the steps of:

i) storing initial values including the reference-voltage value of the APD, the temperature data of the APD in accordance with the first resistance value, the output voltage-related data in accordance with the temperature of the APD, and the output voltage of the second resistance-value related data;

ii) confirming whether a temperature coefficient of the temperature-compensating device is changed and storing a new relational data in accordance with the “Steinhart & Hart” equation when the temperature coefficient has been changed;

iii) receiving the first resistance value from the thermistor and monitoring the change in the temperature of the APD;

iv) determining the second resistance-value data through the temperature data in accordance with the first resistance value, the output voltage-related data in accordance with the temperature of the APD, and the output voltage of the second resistance value-related data if the change in the temperature of the APD is sensed as the result of monitoring in the above step; and,

v) transferring the second resistance-value data to the resistance means so that the resistance means has the second resistance value.